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Dairy-Herd-Improvement Letter

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# PROGRESS REPORT ON AUTOMATION OF DHIA SIRE-PROVING PROCEDURES

The operation of converting sire-proving procedures from a manual punch-card system to 705-III electronic data-processing procedures is progressing. Many facts of general interest are being revealed.

The original punch-card file consisted of more than 6,000,000 lactation records. A preliminary "screening" of the punch cards reduced the number of lactation records to be placed on magnetic tape to 5,995,703. The 5,995,703 records, after being placed on tape, were given a special edit "run" on the 705-III to check for completeness and accuracy. Cows with several records with inconsistencies in identification numbers of sire and/or dam, birth date, freshening dates, and duplicate production records reported, were "pulled" from the Master Tape Cow File for correction and reconciliation. Records of cows with major inconsistencies and duplicate records were dropped from the file.

## RESULTS OF THE FIRST EDIT "RUN" OF THE MASTER FILE

1. Number of records pulled from master file because of inconsistencies and listed for correction and/or reconciliation-----490,000  
(It is estimated at least 90 percent of these records can be corrected and re-entered in the Master File)
  2. Number of records dropped (estimated):
    - (a) Records with inconsistencies impractical to attempt to correct. (Mostly records of early eartagged animals)-----300,000
    - (b) Duplicate records. Records reported more than once--DHIA records and Herd Test records-----300,000
- Total records pulled from Master File-----1,090,000
- Total records "passing" first edit tests and now in Master Tape File-----4,905,703
- Total records in original tape file-----5,995,703

RECORDS IN MASTER COW FILE BY BREED

Breed	Number cows	Number records	Average number records per cow
Ayrshire	85,850	208,549	2.4
Brown Swiss	53,332	130,630	2.4
Guernsey	279,469	637,408	2.3
Jersey	204,678	487,709	2.4
Holstein	717,045	1,758,429	2.5
M. Shorthorn	21,116	43,089	2.0
Red Poll	1,127	2,437	2.2
Red Dane	1	2	2.0
Total:			
Registered	1,362,618	3,268,253	2.4
Grade	894,523	1,637,450	1.8
Grand Total	2,257,141	4,905,703	2.2

Note: There are 2,257,141 cows represented in the Master Cow File with a total of 4,905,703 records, or an average of 2.2 records per cow.

RECORDS OF MASTER SIRE FILE BY BREED

Breed	Registered and Grade	Registered			
	Number cows represented	Number sires represented	Sires with 5 or more daughters	Sires eligible to be re-tabulated	Sires with 5 or more daughters without dams reported
Ayrshire	92,439	14,492	1,600	1,856	38
Brown Swiss	58,538	11,547	1,265	1,150	52
Guernsey	353,398	51,791	7,448	7,051	424
Holstein	980,537	123,513	15,842	14,521	1,161
Jersey	248,294	37,568	4,660	5,411	222
M. Shorthorn	22,913	6,125	997	374	45
Red Dane	2,591	104	59	2	1
Red Poll	1,157	349	37	17	1
Total	1,759,867	245,489	31,908	30,382	1,944

1,759,867 cows Registered and Grade are represented in the Sire File. 497,274 (2,257,141 less 1,759,867) cows in the Master Cow File did not have a Registered sire. These cows were reported without sires. Records of cows with Grade sires were not included in the conversion operation because of inconsistencies and almost complete lack of uniformity in identifying grade sires. These records are being prepared by a clerical staff to be included in a later operational run.



As noted in the table on page 2, 245,489 Registered sires are represented in the Master Sire File, 31,908 of the sires that have been proved have five or more daughters with production records reported. Many of these sires will be proved for the first time. Records of those that cannot be proved (records for dams of the daughters not reported) will be summarized on a daughter-average basis.

30,382 sires that have been previously proved now have sufficient additional daughters (50 percent more than when proved), to warrant re-proving the sires. Many of these sires will be re-proved--the number depending on the number of additional daughters reported that also have dams with production records reported. Records of those sires that cannot be re-proved will be summarized on a daughter-average basis. When the automated sire-proving procedures are in operation, all proved-sire tabulations will be brought up-to-date.

It should be noted also that there are 1,944 sires that have five or more daughters with no dams reported. Daughter-average summaries will be compiled for these sires.

Because of limited 705-III machine time available for processing dairy records, conversion operations have been delayed somewhat. It is expected that sufficient machine time will be available to complete the conversion and produce proved-sire records within the next 2 or 3 weeks.

#### IMPORTANCE OF COMPLETE AND ACCURATE REPORTING OF DHIA LACTATION RECORDS

With the 705-III procedures, DHIA lactation records are thoroughly edited with the result that the Master File will contain perhaps the most accurate records ever assembled for proving sires.

Current records being added to the Master File must be free of inconsistencies with records previously reported or ALL records involved will be "pulled" from the Master File for examination. Current records, therefore, must be complete and accurate or they cannot be placed in the Master File.

Based on the discrepancies observed in the records "pulled" from the Master File, supervisors must give increased attention to the reporting of:

1. Identification number of cow, sire and dam--Registered and Grade.  
For Registered animals, registration papers must be checked to see that the correct identifications are recorded in the owner's DHIA Herd Record Book. For eartagged animals the correct eartag identification number must also be recorded in the owner's DHIA Herd Record Book.  
  
Identification numbers in the owner's DHIA Herd Record Book, which have been checked for accuracy by the supervisor and by the owner must be referred to in reporting 718's and in setting up identification records in EDPM systems where records are processed in a DHIA computing center.
2. Birthdates and freshening dates. They should be re-checked in the DHIA Herd Record Book by the supervisor and by the owner.
3. Production data. All data reported should be checked with data in the owner's DHIA Herd Record Book. The watchword for supervisors and owners must be COMPLETENESS and ACCURACY in all reports.

PRODUCTION RECORDS REPORTED TO THE DAIRY HERD IMPROVEMENT SECTION BY STATE EXTENSION SERVICES,  
FOR THE PERMANENT FILES DURING 1959 and 1960

First 3 Months of 1960											1959
State	Production		Herd Test Records Reported by --					Total			
	Cows on	records	Ameri-	Ayrshire	Brown Swiss	American	Ameri-	records			
	test in all:	reported	can	Breeders:	Cattle	Guernsey:	can	reported			
	association:		Dairy	Associa-	Breeders'	Cattle	Jersey:				
	herds on	1/ 2/	Cattle:	tion	Association:	Club	Cattle:	3/	Records	2/	
	January 1		Club				Club		Returned:		
	Number	Number	Number	Number	Number	Number	Number	Number	Percent	Number	Number Percent
Maine-----	20,980	3,238	-	-	-	58	-	3,296	15.7	139	14,438 74.9
N. H-----	11,742	767	-	-	-	72	-	839	7.1	46	6,807 62.4
Vt-----	45,462	3,053	-	-	-	27	-	3,156	6.9	201	26,859 60.3
Mass-----	22,100	161	9	-	-	92	-	438	2.0	46	18,630 88.3
R. I-----	2,764	56	-	-	-	14	-	70	2.5	16	1,455 52.1
Conn-----	22,035	908	-	-	-	80	-	1,289	5.8	43	16,341 74.5
N. Y-----	151,049	-	45	-	-	119	-	670	0.4	9,825	179,978 126.4
Pa-----	139,606	-	-	-	-	43	-	86	0.1	226	151,683 125.2
N. J-----	27,516	1,951	-	-	-	42	-	2,275	8.3	89	13,308 51.9
Md-----	44,181	1,254	-	-	-	25	-	1,578	3.6	91	37,153 91.2
Del-----	3,595	-	-	-	-	-	-	34	0.9	15	3,592 105.1
Va-----	50,961	10,401	-	-	-	32	-	10,776	21.1	420	43,757 78.7
W. Va-----	8,736	480	-	-	-	12	-	498	5.7	23	5,840 74.5
Ky-----	17,348	590	-	-	-	22	-	675	3.9	48	4,407 34.0
N. C-----	32,084	3,688	-	-	-	-	-	3,949	12.3	59	17,022 65.7
S. C-----	10,557	876	-	-	-	22	-	1,081	10.2	36	3,800 45.1
Ga-----	19,715	1,223	-	-	-	4	-	1,311	6.6	49	4,693 30.9
Fla-----	21,620	1,121	-	-	-	-	-	1,404	6.5	34	5,594 26.7
Ala-----	17,803	1,454	-	-	-	-	-	1,476	8.3	15	6,330 40.6
Miss-----	7,678	552	-	-	-	1	-	660	8.6	5	1,911 30.7
Tenn-----	16,283	50	-	-	-	-	-	169	1.0	-	3,067 23.6
La-----	3,966	285	-	-	-	-	-	340	8.6	1	865 25.3
Ark-----	1,918	52	-	-	-	-	-	74	3.9	4	409 38.5
Ohio-----	60,137	8,386	12	-	-	296	-	9,205	15.3	314	28,618 51.2
Ind-----	35,789	2,126	17	-	-	60	-	2,450	6.8	45	12,958 36.9
Ill-----	58,272	6,398	-	-	-	168	-	6,812	11.7	81	35,832 64.2
Mich-----	60,851	20,334	-	-	-	127	-	20,697	34.0	432	57,958 105.6
Wis-----	98,986	-	-	-	-	161	-	219	0.2	76	38,903 41.1
Minn-----	107,188	11,418	-	-	-	51	-	11,591	10.8	1,188	56,827 58.2
Iowa-----	54,454	7,643	-	-	-	232	-	7,967	14.6	292	33,620 68.2
Mo-----	21,714	2,257	-	-	-	27	-	2,332	10.7	80	8,697 40.6
N. Dak-----	5,403	405	-	-	-	9	-	419	7.8	29	2,606 60.2
S. Dak-----	5,883	145	-	-	-	30	-	190	3.2	7	1,123 19.8
Nebr-----	13,240	489	-	-	-	12	-	578	4.4	35	2,132 18.2
Kans-----	26,110	1,959	-	-	-	18	-	2,026	7.8	81	12,599 51.4
Okla-----	7,348	1,373	-	-	-	11	-	1,462	19.9	69	1,508 21.9
Tex-----	21,866	926	-	-	-	24	-	1,041	4.8	33	6,002 35.6
Mont-----	5,559	360	-	-	-	33	-	405	7.3	3	1,141 21.5
Idaho-----	25,441	1,755	-	-	-	6	-	1,834	7.2	31	7,338 32.6
Wyo-----	1,441	90	-	-	-	-	-	92	6.4	4	475 29.2
Nev-----	3,061	6	-	-	-	-	-	6	0.2	-	256 13.0
Utah-----	16,266	2,228	-	-	-	-	-	2,265	13.9	69	11,266 79.5
Colo-----	15,514	567	-	-	-	40	-	632	4.1	46	2,257 16.6
N. Mex-----	4,055	109	-	-	-	-	-	180	4.4	6	1,008 33.0
Ariz-----	25,951	565	-	-	-	-	-	579	2.2	5	2,166 9.2
Wash-----	43,626	12,861	-	-	-	2	-	13,097	30.0	1,326	16,133 35.0
Oreg-----	28,737	3,754	-	-	-	8	-	3,845	13.4	70	15,501 58.7
Calif-----	295,536	287	-	-	-	19	-	446	0.2	2	2,957 1.1
P. R-----	4,422	251	-	-	-	-	-	251	5.7	19	87 1.8
Hawaii-----	203	9	-	-	-	-	-	9	4.4	-	91 42.1
Alaska-----	0	-	-	-	-	-	-	-	-	-	-
U. S-----	1,746,752	118,861	83	-	-	1,855	-	126,774	7.3	15,774	927,998 57.7

1/ Includes cows enrolled since January 1, 1960.

2/ Production records reported on DHIA-718 and DHIA-1095.

3/ Records returned to States because of inconsistent or incomplete data.